

What is claimed is:

1. A degradable prepolymer for explosive and propellant compositions having increased hydrolyzability comprising at least one -O-CH₂-O- linkage within the backbone of the prepolymer.
2. The degradable prepolymer of claim 1, wherein the prepolymer comprises a non-energetic material.
3. The degradable prepolymer of claim 1, wherein the prepolymer comprises a molecular weight of from about 2000 to about 10,000.
4. The degradable prepolymer of claim 1, wherein the prepolymer comprises monomer units of from about 300 to about 1000 molecular weight.
5. The degradable prepolymer of claim 1, wherein the prepolymer comprises monomer units of from about 400 to about 500 molecular weight.
6. The degradable prepolymer of claim 1, wherein the prepolymer comprises from about two to about ten -O-CH₂-O- linkages within the backbone of the prepolymer.
7. The degradable prepolymer of claim 6, wherein the prepolymer comprises from about five to about eight -O-CH₂-O- linkages within the backbone of the prepolymer.
8. The degradable prepolymer of claim 1, wherein the prepolymer comprises a hydroxy-terminated prepolymer.
9. The degradable prepolymer of claim 1, wherein the prepolymer comprises poly(PEG-

- 2 400 formal).
- 1 10. The degradable prepolymer of claim 1, wherein the prepolymer comprises poly(PCL-
2 500 diol formal).
- 1 11. The degradable prepolymer of claim 1, wherein the prepolymer comprises a
2 functionality of from about 1.7 to about 2.3.
- 1 12. The degradable prepolymer of claim 1, wherein the prepolymer comprises a
2 functionality of approximately 2.
- 1 13. A binder comprising a reacted degradable prepolymer of claim 1.
- 1 14. An explosive composition comprising a reacted degradable prepolymer of claim 1.
- 1 15. A propellant composition comprising a reacted degradable prepolymer of claim 1.
- 1 16. A degradable polymer product formed by the process comprising the steps of:
2 providing a degradable prepolymer for explosive and propellant compositions having
3 increased hydrolyzability comprising at least one -O-CH₂-O- linkage within the backbone
4 of the prepolymer; and,
5 curing the degradable prepolymer with a polyisocyanate mixture.
- 1 17. The degradable polymer product of claim 16, wherein the polyisocyanate mixture
2 comprises Desmodur N-100.
- 1 18. The degradable polymer product of claim 16, wherein the polyisocyanate mixture
2 comprises a plurality of polyisocyanates.

1 19. A degraded polymer product formed by the process comprising the steps of:

2 providing a degradable prepolymer for explosive and propellant compositions having
3 increased hydrolyzability comprising at least one -O-CH₂-O- linkage within the backbone
4 of the prepolymer; and,

5 reacting the degradable prepolymer with a degrading chemical composition.

1 20. The degraded polymer product of claim 18, wherein the degrading chemical
2 composition comprises a dilute acid composition.